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REPORT NO.

**INTELLOFAX 11**

# INFORMATION REPORT

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SUBJECT Kirov Iron-Steel Works and Rolling Mill in Makeyevka NO. OF PAGES

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SUPPLEMENT TO  
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1. Blast furnace department

(1) The blast furnace department has four blast furnaces. The fifth blast furnace is not confirmed. Blast furnaces No 1, 2, and 3 were completed and in operation at the end of 1948. Blast furnace No 4 is scheduled to be completed during 1949.

(2) The following data are known on the production capacity of the blast furnaces: The prewar capacity was approximately one million tons, according to previous records. (1936: 109,700 tons per month.)

(3) Blast furnace No 1 has a daily capacity of 1,200 tons (according to press reports) and therefore should have a volumetric capacity of 1,180 cubic meters. This blast furnace had a daily output of 1,000 tons two weeks after it started operation.

(4) Several sources (PWs) indicated the 1948 daily output (2 blast furnaces) at 1,500 to 2,000 tons of pig iron. With a daily average of 1,750 tons this would be an annual output of 542,500 tons. (One year - 310 days).

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(5) These figures are in agreement with a press report, according to which the combined capacity of blast furnaces No 1 and 2 represents more than 50% of plant capacity. When the third blast furnace starts operation in 1949 the annual output will amount to 750,000 to 800,000 tons of pig iron. According to a press report of January 1949 the utilization coefficient of the blast furnaces (presumably referring to blast furnaces No 1 and 2) may reach 0.75 instead of 0.90 as has been provided (0.75 cubic meters of usable volume yielded one ton of pig iron in 24 hours). This would represent a utilization of 1.30 tons per cubic meter of volume.

(6) The blast furnace department also has an ore mill and an ore dump with two loading cranes.

## 2. Coke-chemical department

### (1) Coking plant.

(a) The coking plant has four batteries of coke ovens. According to previous records there were 326 ovens with a total volumetric capacity of 3,713 cubic meters (Old ~~MAKESKVA~~ Coke-chemical Plant No 5).

(b) Three batteries resumed operation early in 1949 (including battery No 4, according to press reports). No details are available on the construction of the last battery.

(c) According to information [ ] the daily output of the coking plant was 1,800 tons which would correspond to an annual output of 550,000 to 600,000 tons. A computation based on 3,713 cubic meter volume, a coking period of 24 hours and a 75 percent production would come to the same result (550,000 tons). (Only 3/4 of the capacity is utilized, as the coking plant only has three batteries in operation).

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(d) These figures show that the coke requirement of the plant is barely covered. It is possible that, with the enlargement of the blast furnace capacity, additional coke will be supplied from the new ~~MAKESKVA~~ Coke-chemical Plant No. 4.

(e) The coking plant also had a coal concentration installation, a coke-quenching tower, a coke sorting plant, and a coke bunker.

(2) Chemical section. (in operation since the beginning of 1948) The following installations are recorded:

(a) A benzol factory with a theoretical annual output (calculated according to the coal consumption) of about 10,000 tons of crude benzol.

(b) A factory for artificial fertilizer, allegedly producing Thomas meal.

## 3. Steel works

(1) It was previously reported to have 13 open-hearth furnaces and an unknown number of basic or Bessemer converters with a monthly output of 94,000 tons (1935). These indications are repeatedly confirmed by the reporting [ ]

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(2) The following installations are recorded:

(a) Open-hearth department No 1 with six open-hearth furnaces (including one large and four small open-hearth furnaces).

(b) Open-hearth department No 2 with seven open-hearth furnaces (consisting of three large and four small open-hearth furnaces). All furnaces of department No 2 and the furnaces No 1 thru 5 of department No 1 were in operation early in 1949. The following capacity figures for the steel furnaces are available:

The large furnaces have a volumetric capacity of 180 to 200 tons (corresponding to a hearth bottom surface of 65 square meters) and produce 150 tons per tapping. The small furnaces yield 70 to 80 tons per tapping. The refining process lasts 8 to 9 hours in summer (i.e. 3 tappings in 24 hours), but in winter 11 hours (i.e., 2 tappings in 24 hours). On the basis of the indicated production figures and assuming 3 tappings in 24 hours throughout the year, the annual capacity would be 1,100,000 tons of steel (1 year - 320 days) (sic; paragraph 2(4) states that 310 days = 1 work year).

This capacity figure (after deducting at least 30 percent scrap additions) would correspond to the annual capacity of 750,000 to 800,000 tons of pig iron as computed for the blast furnace department.

(c) Bessemer plant with allegedly one Bessemer converter. Details as well as accurate location are not known.

4. Rolling Mill. It consists of four departments housed in two buildings. All four departments were in operation early in 1949.

(a) Old rolling mill. It consists of departments No 3 and 4 (department No 3 is the shape rolling mill and produces rails, girders, and angle iron). One source indicated the output at 200 tons per shift for October 1948 (this would correspond to an annual output of 180,000 tons). Department No 4 is the plate rolling mill. Its daily output is indicated at 150 plates at the end of 1946 and at 200 to 250 plates (25 ft x 6½ ft x 2/5 in) at the end of 1947.

(b) The new rolling mill consists of the departments No 1 and 2. Department No 1 is the blooming mill. Its annual capacity is 1,400,000 tons, according to press reports. Five-to eight-ton ingots are rolled. [ ] indicated the shift norm for [ ] at 605 tons (corresponding to an annual output of 550,000 tons). According to the same source the actual output was 800 to 890 tons per shift (corresponding to an annual output of 750,000 to 800,000 tons). These annual production figures of the rolling mill would correspond to the capacity of the steel works.

(c) The rolling mill departments No 2, 3, and 4 have a combined annual capacity of 400,000 tons, according to press reports.

5. Workshops for the production of metal constructions.

Construction of railroad switches and manufacturing of parts for the construction of track installations.

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6. Locomotive repairshop
7. Oxygen factory
8. Sawmill with three high speed frame saws, one multiple blade sawframe, and planers.
9. Slag concrete factory
10. Two gasometers
11. Transformer station
12. New power plant with three turbines and three boilers (gas fueled). The repeatedly reported long distance heating of the plant was done by this power plant.
13. Use of buildings unknown.

3. Production:

Compilation of probable 1949 production figures:

Pig iron	750,000 to 800,000 tons
coke	580,000 tons
crude benzol	6,000 tons
steel	1,100,000 tons
rolled products	400,000 tons.

2 Annexes: Kirov Iron and Steel Works and Rolling Mill in ~~MAKIZYK~~.

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Comment: Paragraph 1c states that blast furnaces Nos. 1, 2, and 3 were completed and in operation by the end of 1948

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